

### REMARKS

Applicant acknowledges with thanks the examiner's indication that claims 30-32 would be allowable if re-written in independent form to include all the limitations of the base and intervening claims.

The examiner rejected claims 18-26 under 35 U.S.C. §101 because the language "[a] computer program product, tangibly embodied in an information carrier, ..." recited in the claim does not define a computer readable medium.

In response, applicant amended independent claim 18 to recite "[a] computer program product for defining a deformable model for facial recognition, the computer program product comprising instructions stored on a computer-readable storage device that when executed cause a data processing apparatus to:"

As amended claims 18-26 are statutory.

The examiner objected to claims 30-32 on the ground that the terms  $T$ ,  $I(x,y)$  and  $\min_T$  of the energy function need to be defined.

In response, applicant amended claims 28-30 to define these terms. Support for the amended definitions is found throughout the application, including, for example, at page 7 and page 12.

The examiner rejected claims 1-11, 16-20 and 25-29 under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,879,709 to Tian. Further, the examiner rejected claims 12-15 and 21-24 under 35 U.S.C. §103(a) as being unpatentable over Tian.

Applicant amended independent claim 1 to recite compute transformation parameters that represent a transformation from the deformable model to the positions of the four points. Support for this amendment is provided throughout the application, including, for example, at page 5, line 27, to page 6, line 19. Applicant similarly amended independent claims 9, 18 and 28. Additionally, applicant amended claim 10, which depends from claim 9, to recite that computing transformation parameters includes determining optimal values for the transformation parameters such that the value of an objective function based on the transformation parameters is minimized. Support for this amendment is provided, for example, at page 7 of the application.

Applicant similarly amended claim 19 which depends from claim 18. Applicant also amended claim 15 to make the language recited therein consistent with the amended language of claims 9 and 10, and similarly amended claim 25 to make the language recited therein consistent with the amended language of claims 18 and 19.

Tian describes detection, recognition and facial expression classification of the appearance of human faces in digital images and video (col. 1, lines 10-12.) Specifically, Tian explains:

**The present invention is a system and method for automatically detecting neutral expressions in (still or moving) digital images. The computer system has an image acquisition unit. A face detector receives input from the image acquisition unit and detects one or more face subimages of one or more faces in the image. A characteristic point detector receives input from the face detector and localizes and positions the face subimages with respect to a coordinate system and estimates characteristic facial features points in each detected face subimage. At least one of the facial features is the mouth of the face. A facial feature analyzer determines the shape of the mouth and a position of the mouth with respect to a reference in the coordinate system and creates a representation of the shape of the mouth and the position of the mouth. Finally, a face classification unit classifies the representation of each face subimage into one of a neutral class and a non-neutral class. (col. 7, line 66, to col. 8, line 15)**

However, nowhere does Tian describe computation of transformation parameters that represent a transformation from a deformable model to the positions of points in a digital image. Accordingly, Tian does not disclose or suggest at least the feature of "compute transformation parameters that represent a transformation from the deformable model to the positions of the four points," as required by applicant's claim 1. Applicant's claim 1, and the claims that depend from it, are therefore patentable over the cited art.

Independent claims 9, 18 and 27 recite "computing transformation parameters that represent a transformation from the deformable model for the frame to the subsequent deformable model of the subsequent frame," or similar language. For reasons similar to those provided with respect to independent claim 1, at least this feature is not disclosed by the cited art. Applicant's independent claims 9, 18 and 27, and the respective claim depending from them, are therefore patentable over the cited art.

It is believed that all the rejections and/or objections raised by the examiner have been addressed.

In view of the foregoing, applicant respectfully submits that the application is in condition for allowance and such action is respectfully requested at the examiner's earliest convenience.

All of the dependent claims are patentable for at least the reasons for which the claims on which they depend are patentable.

Canceled claims, if any, have been canceled without prejudice or disclaimer.

Any circumstance in which the applicant has (a) addressed certain comments of the examiner does not mean that the applicant concedes other comments of the examiner, (b) made arguments for the patentability of some claims does not mean that there are not other good reasons for patentability of those claims and other claims, or (c) amended or canceled a claim does not mean that the applicant concedes any of the examiner's positions with respect to that claim or other claims.

No fee is believed due. Please apply any other required fees to deposit account 06-1050, referencing the attorney docket number shown above.

Respectfully submitted,

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